In the Claims:

This listing of the claims replaces all prior versions and listings of claims in the applications:

1-39. (Presently Canceled)

40. (New): A method for identifying a compound which binds to a polypeptide selected from the group consisting of:

a) a polypeptide which is at least 95% identical to the amino acid sequence of SEQ ID NO:11;

b) a polypeptide which is at least 95% identical to the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-1640; and

c) a polypeptide encoded by a nucleic acid molecule comprising a nucleotide sequence which is at least 95% identical to the nucleotide sequence of SEQ ID NO:10 or SEQ ID NO:12;

wherein the polypeptide has potassium channel activity;

the method comprising:

i) contacting a sample comprising a polypeptide selected from the group consisting of:

a) a polypeptide which is at least 95% identical to the amino acid sequence of SEQ ID NO:11;

b) a polypeptide which is at least 95% identical to the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-1640; and

c) a polypeptide encoded by a nucleic acid molecule comprising a nucleotide sequence which is at least 95% identical to the nucleotide sequence of SEQ ID NO:10 or SEQ ID NO:12;

with a test compound under conditions suitable for binding; and

ii) detecting binding of the test compound to the polypeptide;

thereby identifying a compound which binds to the polypeptide.

41. (New): The method of claim 40, wherein the polypeptide further comprises heterologous sequences.

42. (New): The method of claim 40, wherein the sample is an isolated polypeptide, a membrane-bound form of an isolated polypeptide or a cell comprising the polypeptide.

43. (New): The method of claim 42, wherein the cell is a mammalian cell.

44. (New): The method of claim 40, wherein the binding of the test compound to the polypeptide is detected by a method selected from the group consisting of:

a) direct detection of test compound/polypeptide binding;

b) a competition binding assay;

c) an immunoassay; and

d) a yeast two-hybrid assay.

45. (New): The method of claim 40, wherein the binding of the test compound to the polypeptide is detected is by an assay for an activity of the polypeptide.

46. (New): The method of claim 45, wherein the assay for activity is selected from the group consisting of:

a) an assay for measuring the release of neurotransmitters;

b) an assay for measuring membrane excitability; and

c) an assay for measuring cellular signaling.

47. (New): A method for identifying a compound which binds to a polypeptide selected from the group consisting of:

a) a polypeptide comprising the amino acid sequence of SEQ ID NO:11;

b) a polypeptide comprising the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-1640; and

c) a polypeptide encoded by the nucleotide sequence set forth in SEQ ID NO:10 or SEQ ID NO:12;

the method comprising:

i) contacting a sample comprising a polypeptide selected from the group consisting of:

a) a polypeptide comprising the amino acid sequence of SEQ ID NO:11;

b) a polypeptide comprising the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-1640; and

c) a polypeptide encoded by the nucleotide sequence set forth in SEQ ID NO:10 or SEQ ID NO:12;

with a test compound under conditions suitable for binding; and

ii) detecting binding of the test compound to the polypeptide;

thereby identifying a compound which binds to the polypeptide.

48. (New): The method of claim 47, wherein the polypeptide further comprises heterologous sequences.

49. (New): The method of claim 47, wherein the sample is an isolated polypeptide, a membrane-bound form of an isolated polypeptide or a cell comprising the polypeptide.

50. (New): The method of claim 49, wherein the cell is a mammalian cell.

51. (New): The method of claim 47, wherein the binding of the test compound to the polypeptide is detected by a method selected from the group consisting of:

a) direct detection of test compound/polypeptide binding;

b) a competition binding assay;

c) an immunoassay; and

d) a yeast two-hybrid assay.

52. (New): The method of claim 47, wherein the binding of the test compound to the polypeptide is detected is by an assay for an activity of the polypeptide.

53. (New): The method of claim 52, wherein the assay for activity is selected from the group consisting of:

a) an assay for measuring the release of neurotransmitters;

b) an assay for measuring membrane excitability; and

c) an assay for measuring cellular signaling.

54. (New): A method for identifying a compound which binds to a polypeptide selected from the group consisting of:

a) a polypeptide comprising a fragment of at least 15 contiguous amino acids of SEQ ID NO:11;

b) a polypeptide comprising a fragment of at least 15 contiguous amino acids of the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-1640; and

c) a polypeptide comprising a fragment of at least 15 contiguous amino acids encoded by the nucleotide sequence set forth in SEQ ID NO:10 or SEQ ID NO:12;

wherein the polypeptide has potassium channel activity;

the method comprising:

i) contacting a sample comprising a polypeptide selected from the group consisting of:

a) a polypeptide comprising a fragment of at least 15 contiguous amino acids of SEQ ID NO:11;

b) a polypeptide comprising a fragment of at least 15 contiguous amino acids of the amino acid sequence encoded by the cDNA insert of the plasmid deposited with ATCC as Patent Deposit Number PTA-1640; and

c) a polypeptide comprising a fragment of at least 15 contiguous amino acids encoded by the nucleotide sequence set forth in SEQ ID NO:10 or SEQ ID NO:12;

with a test compound under conditions suitable for binding; and

ii) detecting binding of the test compound to the polypeptide;

thereby identifying a compound which binds to the polypeptide.

55. (New): The method of claim 54, wherein the polypeptide further comprises heterologous sequences.

56. (New): The method of claim 54, wherein the sample is an isolated polypeptide, a membrane-bound form of an isolated polypeptide or a cell comprising the polypeptide.

57. (New): The method of claim 56, wherein the cell is a mammalian cell.

58. (New): The method of claim 54, wherein the binding of the test compound to the polypeptide is detected by a method selected from the group consisting of:

a) direct detection of test compound/polypeptide binding;

b) a competition binding assay;

c) an immunoassay; and

d) a yeast two-hybrid assay.

59. (New): The method of claim 54, wherein the binding of the test compound to the polypeptide is detected is by an assay for an activity of the polypeptide.

60. (New): The method of claim 59, wherein the assay for activity is selected from the group consisting of:

a) an assay for measuring the release of neurotransmitters;

b) an assay for measuring membrane excitability; and

c) an assay for measuring cellular signaling.